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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/980,814	04/01/2002	Toshiharu Fukui	Y-192	1575

802 7590 05/18/2004

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EXAMINER	
WU, XIAO MIN	

ART UNIT	PAPER NUMBER
2674	8

DATE MAILED: 05/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/980,814	FUKUI ET AL.	
	Examiner	Art Unit	
	XIAO M. WU	2674	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-31* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-31* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *6/28/2002*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not).

Misnumbered claims 8-32 have been renumbered as 7-31 because an original claim 7 is missing.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1-31are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshio et al. (JP-06-316442) in view of Ota et al. (US Patent No. 5,925,438) and Nagatsuka (US Patent No. 5,993,898).

As to claims 1, 10, 14-16, 23, Yoshio discloses a transparent baseboard with conductive multi-layer antireflection films on a transparent substrate (e.g. glass); including the transparent substrate, transparent conductive layer thin film (e.g. a second layer is the outermost film conductive), and transparent dielectric thin film in between (e.g. a first-layer film having is in between the transparent substrate and the second layer).

It is noted that Yoshio does not disclose two refractive layers in between the transparent conductive film and the transparent substrate. Also Yoshio does not specifically disclose what is the refractive index of each of the multi-layer and the optical thickness is determined considering the refraction index of the substrate.

Ota is cited to teach multi-layer antireflection films similar to Yoshio. As shown in Fig. 4, Yoshio discloses a transparent substrate (1), a hard coat layer (2) with refractive index (1.49-1.52), a high refractive index layer (5) with a refractive index (1.50-1.95) which is higher than the hard coat layer (2). Ota further discloses the optical thickness of the film is determined considering the refractive index of the layer (col. 6, lines 4-13). It is noted that Ota fails to mention the refractive index of the transparent substrate. Nakatsuka is cited to teach multi-layer antireflection films similar to both Yoshio and Ota. Nakatsuka further discloses that the refractive index of the transparent substrate such as glass is 1.62 (col. 4, line 24) which is higher the low refractive index layer and lower than the high refractive index layer as disclosed in Ota.

It would have been obvious to one of ordinary skill in the art to have modified the multi-layer antireflection films of Yoshio with the features of the two layers with different refractive indexes in between a conductive layer and a transparent substrate as taught by Ota and a transparent substrate such as glass as taught by Nakatsuka because both Ota and Nakatsuka provide a highly-functional antireflection film with high quality, which can be produced inexpensively in a short time.

As to claims 2, 4, 17-19, Yoshio discloses the conductive layer has thickness determined with desired surface resistance.

As to claims 5, 20, 25, 26, Yoshio discloses the thickness nd of the first-layer film meets the equation $nd>\lambda/4$.

As to claims 6, 10, 11, 21, Ota discloses the layers can have different thickness and the transmission index of the films is no less than 90% (col. 13, line 34 and col. 6, lines 4-13).

As to claims 7, 22, Ota discloses the high refractive index layer is ZrO2 (col. 8, line 41) and low refractive index is SiO2 (col. 5, line 11).

As to claims 9, 24, Yoshio discloses that the surface resistance value between 300-5000ohm.

As to claim 12, Ota discloses the films are deposited with a vacuum evaporation method.

As to claims 13, 29, 31, note the discussion of claim 1 above. Yoshio further discloses that the antireflection films are use for the touch panel.

As to claim 27, Ota discloses an adhesive layer (4).

As to claims 28, 31, Ota discloses using a polarized element.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The US Patents 4,581,280, 4,710,433, 6,329,044, 6337,771, 6,352,761, 6,590,622, 6,629,833, 6,657,271, 6,727,566, 2002/0197824, 2004/0017363 are cited to teach a multi-layer antireflection films device.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Xiao Wu whose telephone number is (703) 305-4721.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Hjerpe, can be reached on (703) 305-4709.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(703) 872-9306

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington. VA., Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377

xw

May 16, 2004

XIAO WU
PRIMARY EXAMINER
ART UNIT 2674